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(54) Title: 3–D SHAPE MEASUREMENTS USING STATISTICAL CURVATURE ANALYSIS

(57) Abstract

    A three dimensional curvature algorithm (fig. 1) using linear regression for modeling biological matter. A three dimensional representation of a structure is obtained by scanning the matter. Selected regions of the scanned structure are assigned numerical values. A number of curvature measurements are calculated based on vertices. Linear regression analysis is used to obtain a coefficient of regression for all curvatures. Variance inflation factors are calculated for the curvature measurements. Multiple regressions are performed to obtain a best fit model.